



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application of

Group Art Unit: 1795

Kazuya Sakata et al.

Examiner: Hoa V. Le

Serial No. 10/554,146

Filed: October 24, 2005

For: BINDER RESIN FOR TONER AND TONER FOR ELECTROPHOTOGRAPHY

Honorable Commissioner of Patents and Trademarks

United States Patent and Trademark Office

Washington, D. C. 20231

Dear Sir:

DECLARATION UNDER 37 CFR 1.132

I, Yoshihito Hirota, declare and state that:

1. In March 2000, I was graduated from Department of Biofunctional Chemistry, Faculty of Agriculture in Kobe University. In March 2002, I was graduated from Division of Forest and Biomaterials Science, Graduate School of Agriculture in Kyoto university.

Since April 2002, I have been an employee of MITSUI CHEMICALS, INC.. Until now, I had been assigned to Product Development Lab. and engaged in the research work concerning material science.

I am a coworker of the inventors of the invention described in the above-identified application, and have a full understanding of the present invention.

2. I carried out the following experiment in order to compare the fixing property of the claimed toner described in Examples 1 to 16 with toners described in Examples 1 to 10 of US 2002/0076637 to Iwa.

From the values of gel portion of crosslinked resin (C) (weight %) and weight ratio of resin (C) to resin (D) described in Examples 1 to 16 in the present specification of the present application, a gel portion of the obtained toner (weight %) was calculated using following formula.

Gel portion of the obtained toner (%) = (gel portion of crosslinked resin (C) (%)) x [(weight ratio of resin (C) based on the total amount of resin (C) and resin (D))]

3. The calculated values of gel portion of the toner described in Examples 1 to 16 in the present specification of the present application are shown in Table 1 and Table 2 along with fixing properties. The fixing properties represented by the marks ◎, ○, △ and × in the present specification were converted to numbers of 1 to 4, wherein the mark ◎ corresponds to 4, the mark ○ corresponds

to 3, the mark Δ corresponds to 2, and the mark \times corresponds to 1.

Table 1

Ex.No.	Ex.1	Ex.2	Ex.3	Ex.4	Ex.5	Ex.6	Ex.7	Ex.8
Gel portion of resin (C) (weight %)	25	23	28	30	20	18	17	35
Weight ratio (C/D)	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
Gel portion of toner (weight %)	12.5	11.5	14	15	10	9	8.5	17.5
Fixing property	4	4	2	2	4	4	4	2

Table 2

Ex.No.	Ex.9	Ex.10	Ex.11	Ex.12	Ex.13	Ex.14	Ex.15	Ex.16
Gel portion of resin (C) (weight %)	8	36	5	36	1	50	3	12
Weight ratio (C/D)	50/50	50/50	20/80	80/20	50/50	50/50	50/50	50/50
Gel portion of toner (weight %)	4	18	1	28.8	0.5	25	1.5	6
Fixing property	4	2	4	2	4	2	4	3

4. The values of gel portion of toner (weight %), and fixing temperature ($^{\circ}\text{C}$) described in Examples 1 to 10 of US 2002/0076637 (Document 1) are shown in Table 3 and Table 4. In addition to these values, the fixing temperature were converted to a fixing property

represented by numbers of 1 to 4, wherein the fixing temperature of 150 °C or less corresponds to 4, the fixing temperature of more than 150 °C, and not more than 160 °C corresponds to 3, the fixing temperature of more than 160 °C, and not more than 170 °C corresponds to 2, and the fixing temperature of more than 170 °C corresponds to 1.

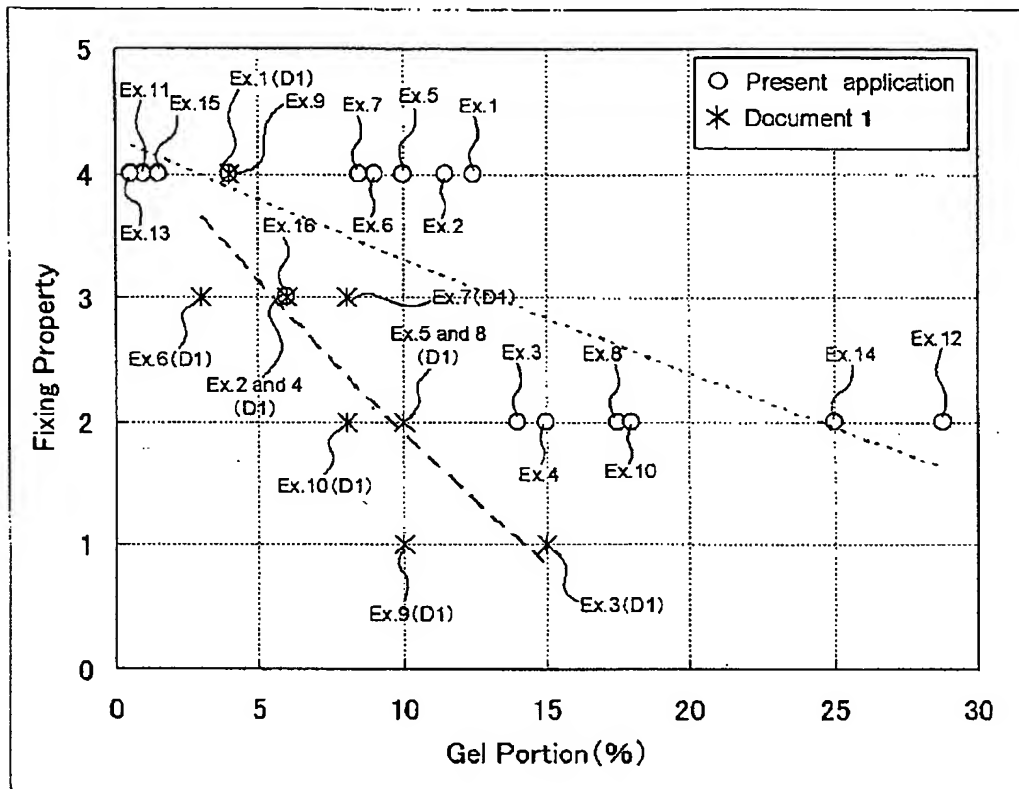
Table 3

Ex.No.	Ex.1	Ex.2	Ex.3	Ex.4	Ex.5
Gel portion of toner (weight %)	4	6	15	6	10
Fixing temperature	150	154	175	154	170
Fixing property	4	3	1	3	2

Table 4

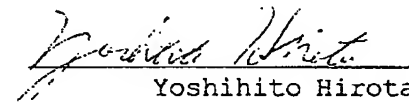
Ex.No.	Ex.6	Ex.7	Ex.8	Ex.9	Ex.10
Gel portion of toner (weight %)	3	8	10	10	8
Fixing temperature	154	160	163	173	156
Fixing property	3	3	2	1	2

5. The values of fixing properties of toner described in Examples 1 to 16 of the present specification, and in Examples 1 to 10 of Document 1 were plotted on a graph. The obtained graph is shown below, wherein abscissa axis represents gel portion of toner (%) and vertical axis represents fixing property.



4. The undersigned declares further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

This day of June 20th, 2008


Yoshihito Hirota